NASA
Glenn
Success
Stories

Internet-Based Space Command

Veridian

TECHNOLOGY

Transmission Control Protocol/Internet Protocol (TCP/IP) based architecture utilizing NASA's TEMPEST software and Veridian's Secure Internet Distributed Operations Gateway (SIDOG) to enable trusted distributed command and control of on-orbit assets.

COMMERCIAL APPLICATION

- Internet-Based Virtual Mission Control Centers and Ground Stations
- Internet-Based Spacecraft, Bus Architectures, and Sensors
- Standardized Internet-Based system interfaces and components
- Geostationary, Medium and Low Earth Orbit Satellite Internet-Based Command, Control and Communications
- Space Research and Experimentation (Virtual, Distributed)

SOCIAL / ECONOMIC BENEFIT

- Dramatic increase in mission efficiency and cost savings due to the ability to control operations on-orbit in near real time within a secure system
- Principal Investigators and experimenters will no longer need to be in a Mission Control facility or wait for critical data to be stripped out
- Time and money savings may result from the ability to test the operation of space vehicles, equipment, satellites, and components in a virtual environment before launch

Veridian's Secure Internet Distributed Operations Gateway (SIDOG) Prototype

NASA APPLICATIONS

- In the future, standard internet protocols and interfaces will be used for controlling and commanding experiments and operations aboard NASA spacecrafts from networked, remote ground locations
- NASA's Virtual Mission Operations Center (VMOC) architecture and concept of operations helping U.S. and International Space Community achieve their goals to "Commercialize Space" and "Introduce the Internet into Space"
- NASA VMOC operations and demonstrations leading to new partnerships and collaboration with Department of Defense Space Organizations

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